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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/668,902	09/23/2003	Chi-Hui Lin	10110682	2528
34283	7590	07/25/2005	EXAMINER	
QUINTERO LAW OFFICE 1617 BROADWAY, 3RD FLOOR SANTA MONICA, CA 90404			KEBEDE, BROOK	
			ART UNIT	PAPER NUMBER
			2823	

DATE MAILED: 07/25/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

AK

Office Action Summary

Application No.

10/668,902

Applicant(s)

LIN ET AL.

Examiner

Brook Kebede

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 September 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☒ Certified copies of the priority documents have been received in Application No. 10/307,704.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character “224” has been used to designate both photoresist layer and insulating layer (see Specification Page 7, line 2 and 4 respectively). A proposed drawing correction or corrected drawings or changes in the specification is required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim 1 recites the limitation “conductive stud” throughout the claim. However, the term “stud” is a relative term and it is particularly used to show something protruding from some kind of surface. However, as shown in Figs. 3-19, the conductive layer (“stud”) 216 or 216' remain buried in the trench does not come out of the trench. The claimed limitation “stud” is not shown in the drawing. Therefore, the drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the “conductive stud” must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Claim 14 recites the limitation “polysilicon stud” throughout the claim. However, the term “stud” is a relative term and it is particularly used to show something protruding from some kind of surface. However, as shown in Figs. 3-19, the polysilicon layer (“stud”) 216 or 216' remain buried in the trench does not come out of the trench. The claimed limitation “stud” is not shown in the drawing. Therefore, the drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the

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“conductive stud” must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Objections

2. Claims 1 and 15 are objected to because of the following informalities:

Claim 1 recites the limitation “the lower trench” in line 3. However, the recited claim lacks proper antecedent basis because the “trench” portions are not properly specified in the claim. The above limitation can be changed to -- a lower portion of the trench --.

Claim 1 recites the limitation “the upper conductive stud” in lines 5-6. However, the recited claim lacks proper antecedent bases because the “the stud” portions are not properly specified in the claim. The above limitation can be changed to --an upper portion of the conductive stud-- or alternatively to -- an upper portion of the conductive **line** -- in order to overcome the drawings objection that set forth in Paragraph 1 above.

Claim 1 recites the limitation “the upper sidewall of the trench” in lines 8-9. However, the recited claim lacks proper antecedent bases because the “trench” portions are not properly specified in the claim. The above limitation can be changed to -- an upper sidewall portion of the trench --.

Applicants are also respectfully requested to make similar changes in Claim 15.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

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The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 1-21 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 recites the limitation “a first conductive layer disposed over the substrate of the outside conductive spacer serving as a control gate, the first conductive layer insulated from the conductive spacer and the substrate” in lines 13-16. However, the recited limitation lacks clarity in its meaning and scope. Therefore, the claim is indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 recites the limitation “a drain region formed in the substrate of the outside first conductive layer.” in lines 19-20. However, the recited limitation lacks clarity because it does not have proper antecedent basis. Therefore, the claim is indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 15 recites the limitation “polysilicon layer disposed over the substrate of the outside polysilicon spacer serving as a control gate, with the polysilicon layer insulated from the polysilicon spacer and the substrate” in lines 13-16. However, the recited limitation lacks clarity in its meaning and scope. Therefore, the claim is indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 15 recites the limitation “a drain region formed in the substrate of the outside polysilicon layer.” in lines 21-22. However, the recited limitation lacks clarity because it does not have proper antecedent basis. Therefore, the claim is indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

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Claims 2-14 and 16-21 are also rejected as being directly or indirectly dependent of the rejected independent base claim.

5. Applicants' cooperation is requested in reviewing the claims structure to ensure proper claim construction and to correct any subsequently discovered instances of claim language noncompliance. See *Morton International Inc.*, 28USPQ2d 1190, 1195 (CAFC, 1993).

Allowable Subject Matter

6. Claims 1 and 15 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action.

7. Claims 2-14 and 16-21 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicants' disclosure Hong (US/5,429,970), Kuo et al. (US/5,606,521), Liu et al. (US/6,124,608), Lee (US/6,255,689), Lee et al. (US/6,303,439), Sakui et al. (US/2001/0038118), Gratz (US/2002/0024081), and Lin et al. (US/6,391,719) also disclose similar inventive subject matter. However, prior art of record neither teach nor anticipate the instant application claimed limitation as a whole either taken alone or in combination.

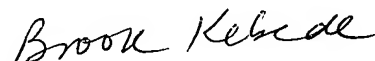
Correspondence

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brook Kebede whose telephone number is (571) 272-1862. The examiner can normally be reached on 8-5 Monday to Friday.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew S. Smith can be reached on (571) 272-1907. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Brook Kebede
Examiner
Art Unit 2823

BK
July 20, 2005